

WHAT IS CLAIMED IS:

1. A zirconia based ceramics, containing  $ZrO_2$  as a main component, 2-4 mol% of  $Y_2O_3$ , 0.05-1.0 wt% of  $Al_2O_3$ , and 0.01 wt% or less each of  $SiO_2$  and  $TiO_2$ .

2. A method of producing a zirconia based ceramics, comprising steps of;

refining starting materials including  $ZrO_2$  and  $Y_2O_3$  to contain 0.01 wt% or less each of  $SiO_2$  and  $TiO_2$ ;

forming a mixture of the starting materials to a desired shape; and,

firing the shaped material at a temperature in a range of 1300 - 1600°C to obtain a sintered zirconia based ceramics.

3. An optical connector member formed of a zirconia based ceramics, containing  $ZrO_2$  as a main component, 2-4 mol% of  $Y_2O_3$ , 0.05-1.0 wt% of  $Al_2O_3$ , and 0.01 wt% or less each of  $SiO_2$  and  $TiO_2$ .

4. An optical connector member comprising a ceramic material, wherein the ceramic material has 0.1 wt% or less of a rate of change in weight while the material is held at a temperature of 85°C and relative humidity of 85% for 2000 hours.

5. An optical connector member according to Claim 4, wherein the optical connector member is a ferrule having a through hole to hold a end portion of a fiber therein.

6. An optical connector member according to Claim 4 or 5, wherein the ceramic material comprises a zirconia based ceramics which is stabilized by a stabilizer other than  $Y_2O_3$  and does not substantially contain  $Y_2O_3$ .

7. An optical connector member according to Claim 6, wherein the stabilizer is  $MgO$  or  $CeO_2$  and  $Dy_2O_3$ .

8. An optical connector member according to Claim 6, wherein the zirconia based ceramics contains 3.0-3.8 wt% of  $MgO$  and contains of 10-40 mol% of monoclinic zirconia crystal in the ceramic structure.

9. An optical connector member according to Claim 6, wherein the zirconia based ceramics contains 2.0-8.0 mol% of  $CeO_2$  and 0.5-4.5 mol% of  $Dy_2O_3$ , with total 6.0 mol% or more of both and contains of 50 mol% or less of monoclinic zirconia crystal in the ceramic structure.

10. An optical connector member according to Claim 4 or 5, wherein the ceramic material comprises a zirconia based ceramics which contains  $ZrO_2$  as a main component, 2-4 mol% of  $Y_2O_3$ , 0.05-1.0 wt% of  $Al_2O_3$ , and 0.01 wt% or less each of  $SiO_2$  and  $TiO_2$ .

11. A ferrule having a through hole for holding an optical fiber therein, wherein the ferrule is provided, on its periphery, with a marker which indicates a direction of decentering the through hole on a top surface of the ferrule.

12. A ferrule having a through hole for holding an

optical fiber therein, wherein a flange member is provided on the rear end of the ferrule and the ferrule and/or flange member is provided, on their periphery, with at least one marker which indicates a direction of decentering the through hole on a top surface of the ferrule.

13. A ferrule according to Claim 11 or 12, wherein the marker is formed such that an angle between a direction of the marker to a center of the top surface of the ferrule and the real direction of decentering the through hole on the top surface of the ferrule to be in a range of  $\pm 30^\circ$ .

14. An optical fiber connector plug which includes a ferrule having a through hole, an optical fiber held in the through hole such that a top surface of the surface is set in the same surface as a top surface of the ferrule and a plug housing attached around the ferrule, wherein the plug housing is provided, on its periphery, with a marker which indicates a direction of decentering the fiber on the top surface of the ferrule.

15. An optical fiber connector device according to Claim 14, wherein the marker is formed such that an angle between a direction of the marker to a ferrule center and the real direction of decentering the fiber on the top surface of the ferrule center is in a range of  $\pm 30^\circ$ .

16. An optical fiber connector device, comprising a pair of optical fiber connector plugs each which includes a ferrule

having a through hole, an optical fiber held in the through hole such that a top surface of the surface is set in the same surface as a top surface of the ferrule and a plug housing being attached around the ferrule, and an adapter in which the connector plugs are inserted to abut the top surfaces of the ferrules, wherein each plug housing is provided, on its periphery, with a marker which indicates a direction of decentering the fiber on the top surface of the ferrule.

17. An optical fiber connector device according to Claim 16, wherein the marker is formed such that an angle between a direction of the marker to a ferrule center and the real direction of decentering the fiber on the top surface of the ferrule center is in a range of  $\pm 30^\circ$ .